

## **IN THE CLAIMS:**

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Canceled)
2. (New) A system for performing a simulation, the system comprising:  
a first program;  
a measurement/control program;  
a simulation program; and  
an input device;  
wherein the system can be configured to turn a simulation mode either on or off;  
wherein the first program is operable to:
  - receive a request for input from the measurement/control program;
  - determine whether the system is in simulation mode; and
  - selectively route the request for input, depending on whether the system is in simulation mode, wherein selectively routing the request for input comprises:
    - routing the request for input to the simulation program if the system is in simulation mode;
    - routing the request for input to the input device if the system is not in simulation mode.
3. (New) The system of claim 2,  
wherein the measurement/control program performs the request for input identically, regardless of whether or not the system is in simulation mode.
4. (New) The system of claim 2, further comprising:  
an output device;  
wherein the first program is further operable to:
  - receive a request for output from the measurement/control program; and

selectively route the request for output, depending on whether the system is in simulation mode, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the system is in simulation mode;

routing the request for output to the output device if the system is not in simulation mode.

5. (New) The system of claim 2,

wherein the first program determines that the system is in simulation mode and routes the request for input to the simulation program;

wherein the first program is further operable to:

receive results for the input request from the simulation program; and

pass the results received from the simulation program to the measurement/control program.

6. (New) The system of claim 2,

wherein the request for input comprises a request for input through a first I/O channel;

wherein the first program is further operable to determine that the first I/O channel is mapped to a first software routine of the simulation program;

wherein said routing the request for input to the simulation program comprises routing the request for input to the first software routine of the simulation program.

7. (New) The system of claim 2, further comprising:

a configuration program;

wherein the configuration program is operable to map the first I/O channel to the first software routine of the simulation program in response to user input requesting the first I/O channel to be mapped to the first software routine of the simulation program.

8. (New) The system of claim 2, further comprising:

a configuration program;

wherein the configuration program is operable to turn the simulation mode either on or off in response to user input.

9. (New) The system of claim 2,

wherein the simulation mode can be turned on and off without requiring the measurement/control program to be modified, wherein the measurement/control program operates correctly, regardless of whether or not the system is in simulation mode.

10. (New) The system of claim 2, further comprising:

a first computer system, wherein the input device is coupled to the first computer system;

wherein the measurement/control program executes on the first computer system.

11. (New) The system of claim 10,

wherein the simulation program also executes on the first computer system.

12. (New) The system of claim 10, further comprising:

a second computer system, wherein the second computer system is coupled to the first computer system by a network;

wherein the simulation program executes on the second computer system.

13. (New) The system of claim 2,

wherein the simulation program is operable to simulate a physical system.

14. (New) The system of claim 2,

wherein the simulation program is operable to simulate operation of a device.

15. (New) The system of claim 2,

wherein the measurement/control program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

16. (New) The system of claim 2,  
wherein the simulation program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

17. (New) A method for performing a simulation, the method comprising:  
turning a simulation mode either on or off in response to user input;  
executing a measurement/control program;  
executing a simulation program, wherein the simulation program is operable to simulate a system;  
receiving a request for input from the measurement/control program;  
determining whether the simulation mode is turned on or off; and  
selectively routing the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:  
routing the request for input to the simulation program if the simulation mode is turned on;  
routing the request for input to an input device if the simulation mode is turned off.

18. (New) A computer-readable memory medium comprising program instructions for performing a simulation, wherein the program instructions are executable to:

turn a simulation mode either on or off in response to user input;  
receive a request for input from a measurement/control program;  
determine whether the simulation mode is turned on or off; and  
selectively route the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to a simulation program if the simulation mode is turned on;

routing the request for input to an input device if the simulation mode is turned off.